

ABSTRACT OF THE DISCLOSURE

A low complexity approach to DASD cache management. Large, fixed-size bands of data from the DASD, rather than variable size records or tracks, are managed, resulting in reduced memory consumption. Statistics are collected for bands of data, as well as conventional LRU information, in order to improve upon the performance of a simple LRU replacement scheme. The statistics take the form of a single counter which is credited (increased) for each read to a band and penalized (reduced) for each write to a band. Statistics and LRU information are also collected for at least half as many nonresident bands as resident bands. In an emulation mode, control information (e.g., statistics and LRU information) regarding potentially cacheable DASD data, is collected even though there is no cache memory installed. When in this mode, the control information permits a real time emulation of performance enhancements that would be achieved were cache memory added to the computer system. Dynamic reconfiguration of the cache size is also permitted in real time without requiring computer system downtime.

TOP SECRET